

DOCUMENT RESUME

ED 093 969

TM 003 822

AUTHOR Owens, Thomas E.; And Others
TITLE Curriculum Definition and Evaluation in Employer-Based Career Education (Dewey Streaks Through Career Education).
PUB DATE [Apr 74]
NOTE 14p.; Paper presented at the Annual Meeting of the American Educational Research Association (59th, Chicago, Illinois, April 1974)
EDRS PRICE MF-\$0.75 HC-\$1.50 PLUS POSTAGE
DESCRIPTORS *Career Education; *Curriculum Development; *Curriculum Evaluation; Educational Programs; High School Students; Learning Processes; Work Experience
IDENTIFIERS *Dewey (John); EBCE; Experience Based Career Education

ABSTRACT

In an attempt to develop a theoretical framework with which to evaluate a Comprehensive Experience-Based Career Education (EBCE) Project, the assumptions underlying this model of career education are discussed. The curriculum and learning strategies of the EBCE programs are described, and it is demonstrated how John Dewey's philosophy can serve as a model in helping to understand the full implications of such a program. Special interest is given to the implications for the evaluation of experience-based programs, and the problems and challenges encountered are given attention. The primary goal of the EBCE projects is to integrate a student's knowledge of a variety of careers with the acquisition of cognitive, interpersonal, and affective skills through a series of planned experiences with identified learning outcomes. The benefits of an experience-based system are noted, but also described are many of the difficulties inherent in it, especially for evaluation. It is concluded that evaluation must bend to accommodate the experience-based educational system. (Author/RC)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

CURRICULUM DEFINITION AND EVALUATION IN EMPLOYER-BASED
CAREER EDUCATION (DEWEY STREAKS THROUGH CAREER EDUCATION)

by

Thomas R. Owens, Marshall D. Herron and Harry L. Fehrenbacher

Northwest Regional Educational Laboratory
Portland, Oregon

Presented at the Annual Meeting of the
American Educational Research Association

Chicago, April 1974

Session No. 13.06

ED 093969

TE 003 S22

CURRICULUM DEFINITION AND EVALUATION
IN EMPLOYER-BASED CAREER EDUCATION
(DEWEY STREAKS THROUGH CAREER EDUCATION)

Introduction

Amid the current clamor about career education the thought of John Dewey streaking out from behind his dust covered books may be a refreshing sight. Why not! He probably would have considered streaking an exciting experience.

In an attempt to develop a theoretical framework with which to evaluate a comprehensive Experience-Based Career Education (EBCE) Project, we have reviewed the assumptions underlying this model of career education. The layers of career education clothing have been peeled back and the streaker appears to be John Dewey. In this paper we describe the curriculum and learning strategies of the EBCE programs and show how Dewey's philosophy can serve as a model in helping to understand the full implications of such a program. We are especially interested in the implications for the evaluation of experience-based programs and discuss in some detail the challenge and problems encountered. We think we have identified the phantom streaker. Unlike much of today's streaking, this adventure has the potential of being more than a passing fancy. It can serve as a much needed solid philosophical base with which to evaluate with some perspective these innovative educational programs.

John Dewey's ideas have had limited impact on the mainstream of actual practice in the public schools. Except for some shifts in curricular emphasis, the American high school has gone virtually unchanged for over fifty years. Part of the problem is that the schools continue to try to be self-contained learning environments. As a result, as pointed out in last year's report of the panel of the President's Science Advisory Committee (Coleman, 1973), schools continue to isolate youth from the realities of their environment as they attempt to pass along their condensed, distilled and encapsulated version of "our cultural heritage." This occurs in spite of the fact that we are living in an age of rapid change and mass media--where young and old alike are bombarded with information, much of which is assimilated without using reading skills.

Early in 1971, the U.S. Office of Education (USOE) initiated feasibility studies to determine whether secondary level programs utilizing consortia of employers and community members could provide students full educational

services that integrate career awareness and exploration with cognitive and interpersonal skills development on a highly individualized basis. The following spring, four regional educational laboratories (Appalachia Educational Laboratory, Far West Laboratory for Educational Research and Development, Northwest Regional Educational Laboratory and Research for Better Schools, Inc.) submitted plans to begin local operations in September 1972. Operations began shortly afterwards and funding for the four projects was transferred from USOE to the newly formed National Institute of Education (NIE). At the conclusion of the first year of operation, the name of the projects was changed by NIE from "Employer-Based" to "Experience-Based" Career Education to reflect both the broad base of involvement by people in the community and an expanded concept of the learning environment.

The EBCE Curriculum

Among both curriculum theorists and educational practitioners the definition of "curriculum" varies widely. To some it refers to the particular textbooks or course titles. To others it conveys the notion not only of content but also of instructional processes received. In the context of this paper curriculum is defined as the sum total of the learning experiences encountered by a person.

The learning experiences encompassed by this broad definition of curriculum result from the interaction of content, learning strategies and the environment for learning. The unique aspects of these three areas in the EBCE curriculum provide high school students with the widest range of learning experiences--in career development, basic skills and life skills.

Content. The primary goal of the EBCE projects is to integrate a student's knowledge of a variety of careers with the acquisition of cognitive, interpersonal and affective skills through a series of planned experiences with identified learning outcomes.

The content of EBCE programs differs significantly in both scope and purpose from that of vocational education or school-based career education programs. In fact, the scope of the EBCE curriculum content is even broader than the curriculum of many comprehensive high schools. A recent congruency analysis of objectives common to all EBCE projects revealed that each of the four EBCE sites had objectives in eight areas: (1) career development skills and knowledge, (2) self-knowledge of interests, abilities and values, (3) reading skills, (4) problem-solving skills, (5) oral communications, (6) writing skills, (7) interpersonal skills, and (8) basic quantitative skills (Millsap, 1974). In addition to these eight areas at least two of the four EBCE sites also have objectives in the following areas: (1) economic skills for daily living, (2) worker and employer rights and responsibilities, (3) political awareness, (4) inquiry skills, (5) physical fitness and health, (6) applied mathematics, (7) science, and (8) aesthetic expression (Corder, 1974).

The EBCE content differs from that of vocational education in that the EBCE programs do not focus primarily on training a student for a specific job. The EBCE content differs from that of school-based career education programs in that the EBCE content is intended not as a single course to be added to an existing schedule of courses but instead to provide a total integrated educational program. It is an alternative form of education. For an example of how the EBCE programs provide an integrated learning experience for eleventh and twelfth grade high school students, you may wish to read the recent brochure on the EBCE project operated in Tigard, Oregon through the Northwest Regional Educational Laboratory.*

Learning Strategies. Since the EBCE content and objectives shown in the prior section resemble those for many comprehensive high schools, the question becomes "What is so different about the EBCE projects?" The answer lies primarily in the learning strategies used and in the environment in which the learning takes place.

The term learning strategies is used rather than instructional strategies since the emphasis in EBCE is on individualized student learning that often excludes formal instruction. While part of a student's learning occurs systematically at employer/community sites and at a learning center, other learning takes place in both locations through an informal process. Such informal learning is often unspecified in advance and could result from a student discussing his activities with a learning manager or from a student becoming aware of the informal communication networks that exist at employer sites.

Some of the learning strategies involved in one or more EBCE projects include work experiences at employer or community sites, independent study and work on projects, use of tutors, certification by community people of competencies such as maintaining a checking account, using computers and other media for career information, personal and career counseling and use of media-assisted learning.

Learning Environment. The physical location and psychological orientation for learning in the EBCE projects are two important features of the learning environment. Each of the EBCE projects is housed in a learning center outside the feeder high schools. Here activities for students are coordinated, individual and group counseling takes place, and students prepare materials related to their community experiences. Students spend approximately half of their time at these learning centers and the other half at community or employer sites. These sites vary from one-man operations to others

*Community Experiences for Career Education, (CE)₂, November 1973. Single copies of this 12-page brochure are available free by writing to Dr. Rex Hagans, Northwest Regional Educational Laboratory, 710 SW 2nd Ave., Portland, Oregon 97204. Most of the examples cited in this paper are based on experiences in the (CE)₂ program.

employing thousands of people. Students, after selecting a site, have opportunities to explore or learn about jobs ranging from semiskilled to professional. The length of time students spend at any one site can vary from a several hour orientation to an indepth experience requiring over six months.

Psychologically the environment in which EBCE students learn differs significantly from the traditional classroom environment. The "real world" of employer and community sites is one in which most students can see a meaning for the activities taking place. As a result, their learning also takes on a dimension of reality usually lacking in the schools. This "real world" environment influences students' attitude toward learning career skills (e.g., typing or electrical wiring), applied basic skills (e.g., mathematics and oral or written communications), and personal skills (e.g., ability to analyze their feelings in relation to a variety of situations). The "real world" environment also is reflected in the role of the instructors--those in the community, at employer sites and at the learning centers. Instead of the instructors having to pretend (as is often expected of classroom teachers) that they are the knowledge authorities in all areas, EBCE instructors serve as one of many resources available for the students' learning. Consequently, students usually are sent to the most knowledgeable people in the areas that interest them.

The Interaction of the Parts. The EBCE curriculum operates under the assumption that program objectives (content) can be attained by individualized student activities (learning strategies) in the community (environment). An example might help illustrate how it works.

Marc, an EBCE student, has been exploring the bookkeeping system of a local lumber yard (physical reality). By talking with the accountant and the company president, he becomes interested in the tax structure that impinges upon the company. He discusses his interests (psychological reality) with the learning manager in the EBCE program. He agrees to do a project at the lumber company dealing with taxation. By negotiating with the learning manager he lays out project objectives and procedures (learning strategies). The learning manager might structure the situation somewhat by eliminating some unreasonable objectives that would require too much time and by suggesting some additional objectives in interpersonal communications and mathematics that would be helpful to the student. After working at the lumber yard and renegotiating parts of the project, Marc completes a learning package that deals with a broad range of learning outcomes including citizenship, interviewing, mathematics, general reading, writing and technical reading (content). Thus the total curriculum has centered on Marc's unique experiences to provide him with a truly interdisciplinary education.

Dewey and Experiential Learning

Dewey Recognizes the Value of Experience. John Dewey, one of the early champions of experiential learning, developed an inquiry model that identifies the characteristics of an experience-based curriculum. According to Dewey, the way a person acquires knowledge of any kind depends on what transpires during discreet experiential episodes (experiences). The starting point of an experience is an existential situation that changes rapidly in the early steps of inquiry from indeterminate to problematic. The learner is an integral part of the total situation, changing his environment and being changed by it. This dynamic interaction between the learner and his environment is an important element in the system.

In EBCE, the two-way interaction takes place in an environment which is the real-life situation as it exists at an employer or community site. Students' impact on these environments is evidenced in many ways. Some employers have modified training requirements or procedures while others have changed their attitudes toward their employees in general and young people in particular. In one specific case, an EBCE student remarked to his employer instructor that he was contemplating dropping out of high school. One of the vice-presidents of this rather large company, learning of the remark, took two hours to counsel the youngster on the ramifications of such a decision. The fact that the employer took this time was evidence that the impact was two-way.

Running Through a Problem-Solving Process. Given a problem, the inquirer selects relevant facts of the case by virtue of insights gained from past inquiries, and hypothesizes a potential solution. The inquirer then rechecks the facts of the case, selecting some new observations and eliminating others as a result of his formulation of the problem. He reformulates the problem and potential solution in the light of these facts. The process ends in a solution to that particular problematic situation.

The problems confronting the EBCE student are real-life problems that occur on any job site--interpersonal problems, communication problems, problems of how to apply relevant skills in particular situations, or how to acquire needed skills when new situations arise. Of course situations often require some structure if they are to result in solutions that have some generalizability beyond the particular instance. The degree of confidence the inquirer may have in the solution and its generalizability depends on what Dewey calls the continuum of inquiry. To be warranted, solutions must be grounded in the inquiry behavior of ourselves and others.

"Inquiry selects evidential data by means of comparison of what is found to exist or occur in different existential cases....

Without collection of phenomena observed at different times and places under different conditions, grounded inquiry...can make no headway." (Dewey, 1938a)

The continuity of relevant experience depends on the ability to link a number of separate experiences dealing with similar phenomena so that the results are generalizable to future experiences. As particular problems are solved, new ones emerge. As individuals share the results of inquiries into a common core of problems, they develop systems of interrelated abstract symbols. These logical forms along with collections of warranted assertions make up our culture.

"To speak, to read, to exercise any art, industrial, fine or political, are instances of modifications wrought...by the cultural environment.

"The individual with his individual peculiarities, whether native or acquired, is an active participant in producing ideas and beliefs, and yet the latter are logically grounded only when such peculiarities are deliberately precluded from taking effect....The present point may be formulated as the difference between the subjective and the objective. To be intellectually "objective" is to discount and eliminate merely personal factors in the operations by which a conclusion is reached." (Dewey, 1938a)

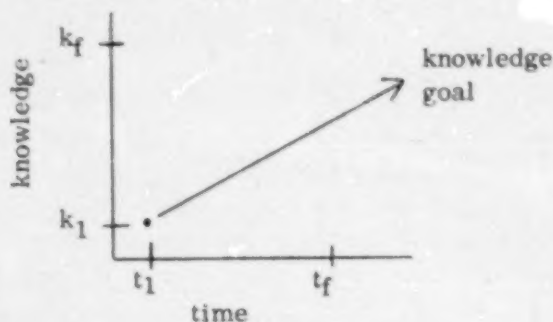
Cultural relationships, then, provide the means of going beyond the inherent uniqueness of the inquiry of particular individuals. While learning is undoubtedly a highly individualized process, the learner has no check on the accuracy or relevance of his own private experience unless it can be compared to the experience of others in similar situations. EBCE provides a natural format for this kind of "reality check" procedure. This check can be two-way. The student can observe and interact with adults such as the corporate vice-president counseling session described earlier. He also can share his own exploration and in depth experiences with other students who have been at the same or similar employer or community sites. A natural consequence of the experiences and these sessions is that learning becomes interdisciplinary to the extent that the problems are interdisciplinary. A student who explores corporate management at a paper company may well become involved in discussions or projects concerning the impact of the plant on the environment, the economy of the community, or the tax structure of the schools, depending on his interests.

Structuring the Experience. This last point brings us to another important set of distinctions made by Dewey (1938b) in his essay Experience and Education. Experiences may be either noneducative, educative or miseducative. Educative experience occurs as the individual student conducts inquiry in real-life problematic situations in the manner we have been describing. If

inquiry is cut short--i.e., the learner is asked to accept the solutions of another without testing them himself--the experience is ungrounded and hence noneducative. (Dewey calls this "traditional" education.) On the other hand, if the learner is left to himself to interpret the results of his own inquiry without reference to the standards or findings of others, the results could be miseducative (Dewey's complaint against "progressive" education.) Consequently, one solution may work in a particular case, but for the "wrong" reason, and it is not necessarily applicable in similar future situations. It is the responsibility of educators to structure situations--the learning environment of the student--in such a way as to maximize the quality of educative experiences.

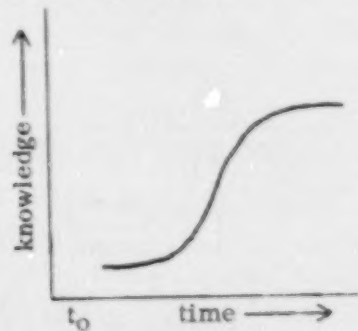
One of the things the Tigard EBCE project staff has developed to help structure meaningful experiences at employer and community sites is a Learning Site Analysis Form (LSAF). A staff member uses this form to analyze those skill areas at the learning site that appear to be particularly cogent. A newspaper office probably uses a modicum of arithmetic skills, but it is far more likely to be able to provide good experiences in writing, critical thinking and oral communications. The local environmental qualities testing lab certainly is involved in writing reports, but is probably better equipped than most sites to provide good experience in the application of biological and chemical principles. The potential described in the LSAF is translated into sets of site-specific behavioral objectives by members of the operations staff. When a student decides to spend some extended learning time on that site, he negotiates with a learning manager to design a project for that site. The project considers the length of time the student plans to spend on the site, his interests and his basic skill strengths and weaknesses. This mechanism helps the student and his employer/instructor focus on relevant elements for learning. Other "problems" will arise as a matter of course as the experience unfolds and the two people interact at the site.

Looking at How People Learn. An area of concern in the way most traditional schools operate is the tacit assumptions made, whether intentionally or by default, concerning how people learn. Teachers traditionally have utilized a sort of "shotgun" or bell-curved approach in which the organization and presentation of material is geared to the average student with hopes that the scatter effect will bring along some of the slower and faster students. The following graph oversimplifies, but illustrates, the point.



Teachers have tended to act as though students came to them at time, (t_1) , all having about the same basic knowledge level, (k_1) , in a specific content area. They then proceed in a generally linear and logical (to the teacher) order toward some final knowledge goal at some future time, hoping that the majority of their students follow along and grading them on the extent to which they do. In this model, time and knowledge parameters, as well as the rate at which learning is expected to occur, generally are defined by the scope and sequence of a textbook and the constraints of the school calendar.

Most research on learning indicates that a more accurate depiction of the growth of knowledge in a particular area for a given individual would be much more like Dewey's description. The individual at some starting time, (t_0) , is at some low level of knowledge. The learner may not even be aware that such an area of knowledge exists.



There likely would be a gradual rise in awareness (an indeterminate situation) followed by an inflection curve (transformation to a problematic situation) and a steeper incline (the oscillation of the inquiry process) in the rate of accumulation of knowledge. Another inflection point occurs and a sharp decline is noted as the individual approaches a saturation, or lack of interest, point. This is really nothing more mysterious than a simple learning curve hypothetically applied to a general knowledge area rather than to the learning of a specific task or skill.

The important points here are that (1) the slope of the curve is variable, not constant, and (2) the slope and specific shape of the curve (i.e., inflection points, etc.) are a function of the specific individual involved. Given a group of individuals in a typical classroom, we are, in fact, dealing with a family of growth curves in the particular knowledge area being considered. There conceivably can be as many different slopes and inflection points as there are individuals in the class. To compound the problem further, the origins of the curves probably are not coincidental. At any given time, (t_2) , when the instructor wishes to begin his "course," one individual could be at knowledge-level one, (k_1) , another at an inflection point and another somewhere in the middle of the growth rate curve.

Running the Program. An individualized, experience-based program has obvious advantages for dealing with this kind of complexity. This does not mean that attempts to run such program in practice do not meet with difficulty. Here especially is where we meet Dewey's unique vs. generalizable--singularity vs. plurality--issue head on. If situations are to be structured that are educative for each student, we must have an accurate assessment of the individual's level of knowledge in relevant areas. Each student will require constant interaction with instructors and other students in fairly structured ways lest experience become mere isolated instances with a high potential for being miseducative. A good example of this was a girl in an EBCE program who was "fired" from her employer placement site in the community. The first reaction of staff members might have been to advise her not to return to that site and to look for another placement. Instead, she returned to the site, worked out her differences and got herself reinstated. Now, if she did this through open and honest dialogue with the employer, she probably acquired some generalizable interpersonal communications skills. On the other hand, if she accomplished her purpose through judicious fluttering of the eyelashes, she might not have arrived at a generalizable solution!

The logistics of structuring learning environments to provide educative experiences for 50 to 100 or more students boggles the mind. To imagine how you would face the problem of doing program evaluation where there conceivably could be as many sets of program outcomes as there were students is difficult. But then Dewey didn't say that experience-based education would be easy to do--just effective!

Implications for Evaluation

Conceptual and methodological changes must be made before evaluation can adequately describe and judge an experience-based educational program. Some special problems exist. First, a simplified homogeneous set of values to judge educational programs is not logically consistent with an experience-based system. Second, group data collection and analysis techniques do not adequately reflect the individualized activities and outcomes of the program.

Describing the Values of the Reference Groups. The root of the problem centers around the basic purpose of program evaluation--the assessment of the worth or value of the program. To assess the worth of anything, some description or consensus of what is worthwhile must be attained. The evaluation of traditional school-based programs usually operates under the assumption that a homogeneous set of values does exist by which to judge the program and defines these values as the implications of program objectives. Thus, it is commonly agreed that the primary purpose of a course like high school algebra is to familiarize the student with mathematical concepts and to develop skills in mathematical manipulation. The evaluation of a high school algebra program would not raise a great deal of controversy

if it focused on student knowledge and skills in mathematics. Experience-based education does not enjoy such homogeneity of values and goals on the part of its "educators." The "educators" in an experience-based system are all the people with whom the student interacts. This could include project staff, other students, employers, employees, welfare recipients, union representatives, professionals, artists, elected officials, retired persons and all other segments of the community. The range of values of this diverse group is as wide as the pluralism which describes our society. Each group may have its own idea of what is worthwhile and thus assess the educational experience from a different point of reference. The evaluator has no agreed upon basis for making judgments about program worth.

A case in point illustrates this problem. One measure of the effect of the career development activities of EBCE is the "maturity" of career choice. At least one prominent instrument developer in the field of career education (John O. Crites, developer of the Career Maturity Inventory) includes in the concept of career maturity the stability over time of career choice (Crites, 1973). Under this assumption, the student who decides what he wants to do and sticks with it exhibits career maturity. EBCE program staff, however, view career maturity as the ability to recognize the complexity of career choice and to ask questions that will yield the most useful information when at some point in time that career choice must be made. For the staff, the student who keeps an open, inquiring mind and who does not lock himself into an early choice by exploring only one occupation exhibits career maturity.

Thus, the luxury of assessing a program in terms of a homogeneous set of educator expectations is not available in an experience-based system. Rather than assuming value consensus, ways must be established to identify and describe the often divergent values of the different reference groups. Only then can judgments about program worth be made that relate to the values of these various groups.

Evaluating Individualized Activities. In theory, school-based education describes both content and processes as student learning outcomes. Evaluation often focuses on content with minor attention given to processes (e.g., the student's ability to recognize the author's main point in a written passage). However, experience-based education emphasizes processes. And the interdisciplinary and holistic nature of student experiences requires that evaluation be able to describe and measure these processes at a relatively complex, sophisticated level. For example, EBCE students must learn to be responsible for planning and implementing their own learning programs. This process has both affective and cognitive dimensions. To break this process into its components for measurement purposes would destroy its meaning.

To measure these processes most student outcomes must be identified in advance. It is impossible to measure all outcomes that result from the student experience. Consequently, a guide is needed in terms of prespecification to describe the key outcomes, and to do so without destroying their total gestalt and meaning. Yet, this must be accomplished without ignoring the fact that the program is individualized, that different outcomes are expected and desired for different students and that some unanticipated outcomes are also likely to occur that are important to evaluate. This is precisely where a theory-based evaluation design has payoff.

Once the expected student outcomes have been identified, the next step in the evaluation of an experience-based educational system involves the description of student experiences. This becomes crucial because, although the individualized student experiences comprise the treatment in the often-used research design model of pretest-treatment-posttest, they vary in quality and kind. Each student encounters unique elements in his community and each student further personalizes his experience by his interactions with, and interpretation of, those elements. General descriptions (e.g., the student encounters a labor dispute at a local manufacturer) do not help one evaluate whether the experience is educative, noneducative or miseducative. Instead, methods must be found to describe the experiences in depth, and this description must include the student's interaction with, and interpretation of, the total experience.

Because experiences are unique, the above description and analysis must be done individually, perhaps employing case study methodology. Program evaluation, however, must generalize the worth of the program for all students, or at least for various types of students, and has usually accomplished this through the use of group data. It would be useful, therefore, to develop methodology for combining individual data in meaningful ways to enable evaluation to assess program worth.

The final step in the evaluation of an experience-based system includes the application of the value systems of the community to the data collected. Thus the evaluation report might include more than the data and a single interpretation. It might include an interpretation based on the values of various groups (e.g., employers, parents, community people and students, or groupings such as liberals, conservatives, radicals). Hopefully in this way the evaluation would reflect the diversity of values that make up the system and would not be limited to the biases of the evaluator or program staff.

The Bending of Evaluation. So, it seems that evaluation must bend to accommodate the experience-based educational system. Because the system relies on the community, it must directly reflect the plurality of values that make up that community. Because student outcomes are complicated processes, many of them must be specified in advance to permit the

development of measures adequate to reflect their complexity and interrelatedness. Since student experiences are individualized, it is essential to find ways of describing the "quality" of these experiences on an individual basis. The interpretation of the data will adequately reflect the variety and richness of the program only if it is interpreted in light of the diverse values of those who make up the program.

Streaking (Stumbling) Into the Future

We feel that in EBCE many of John Dewey's ideas are being put to the test in a systematic way. We've noted some of the benefits of an experience-based system, but also described many of the difficulties inherent in it, especially for evaluation. We've concluded that evaluation must shed some of its ways if it is to be of use to experience-based education.

Our exploration this year of Dewey's philosophy as it relates to experience-based education has presented us with a stimulating challenge. We have only recently become aware of how a theoretical model for evaluating experiential learning could be developed around Dewey's ideas. Such an evaluation model would (1) help provide a rationale for identifying variables to measure, (2) suggest certain types of methodology, (3) suggest a framework within which to analyze relationships, and (4) provide information regarding the value and outcomes derived from experience-based learning.

During the coming year we hope to construct an experiential model for evaluation and apply it to EBCE. Such a model would probably involve identifying the social and work values of reference groups involved with EBCE, conducting some in depth student interviews, integrating case study data, and employing measurement techniques such as simulation to zero in on processes that experience-based education purports to enhance.

We don't know at this point if the new techniques and approaches will work. But, as Dewey would put it, faced with a problematic situation, we've hypothesized a solution and must now test it in reality.

REFERENCES

- Coleman, James S., et al. Youth: Transition to Adulthood, Report of the Panel on Youth of the President's Science Advisory Committee. Chicago: University of Chicago Press, 1973.
- Corder, Reginald. A Review of the Objectives of Four Employer-Based Career Education Models: A Search for Congruency--Stage Two. Princeton: Educational Testing Service, January 1974.
- Crites, John O. Career Maturity Inventory: Theory and Research Handbook. Monterey, California: CTB/McGraw Hill, 1973.
- Dewey, John. Logic, The Theory of Inquiry. New York: Holt, Rinehart and Winston, Inc., 1938.(a)
- Dewey, John. Experience and Education. New York: The Macmillan Company, 1938. (b)
- Millsap, Mary Ann. "Statement on Common Objectives for the Eight Major Areas." Memo from the EBCE evaluation coordinator for NIE, February 1974.